



Engineered and Developed by Purestream Services

+ CLEAN AND CONCENTRATE BRINE + RECLAIM WATER FOR RE-USE OR DISCHARGE*

+ AVARA ACCELERATED VAPOR RE-COMPRESSOR WATER TREATMENT:

Purestream's AVARA Advanced Vapor Recompression System provides an economical and reliable solution for higher level treatment of produced and frac water. Deployed in- **field** and closer to the wellhead, the AVARA system promotes minimal liability for spills by providing clean, distilled water for piping and transfer around the **field** and reduces overall water handling costs.

The AVARA is a highly advanced, energy ef- **icient** combined water treatment and brine concentration system. The system treats produced and frac water and provides two ef- **icient** streams: distilled quality water and clean, concentrated brine for re-use in **field** operations.

Produced or frac **flow-back** water enters the AVARA induced-gas **rotation** (IGF) unit for minimal pre-treatment. Air and gas is educted from within the main vessel to produce a stream of water and oil with **ne** bubbles. Oil and suspended solids create a **loc** in the presence of clari- **er** chemicals. This **loc** is removed from the surface in a froth skim system.

De-oiled water exits through the bottom of the **rotation** unit and is piped to the AVARA Vapor Recompression System. Water in the AVARA core is heated and boiled in Purestream's patent pending thermally ef- **icient** AVARA process. Steam from process is re-condensed to provide clean, distilled water. Residual chlorides are concentrated to a brine of about 250,000 parts per million.

Purestream is known for it's reliable and innovative water treatment technology. This, combined with the company's team of outstanding experts in oil- **field** water treatment, clearly sets Purestream Services apart from other technology and treatment companies. Purestream's water treatment team works closely with **field** operators to optimize AVARA system integration within existing **field** operations to provide clean, distilled water and a concentrated brine.

Contact a member of Purestream's Water Team today to learn more about treating water for re-use and **field** practical water solutions for your **field**:

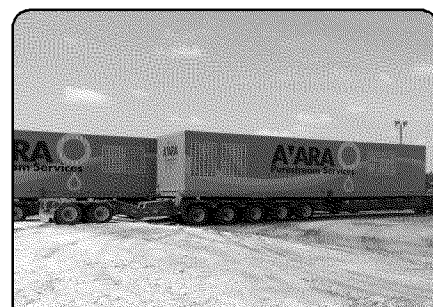
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Email: rjones@purestream.com Call: (432) 553-9170

* Federal, state and local discharge
may be permits required



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AVARA

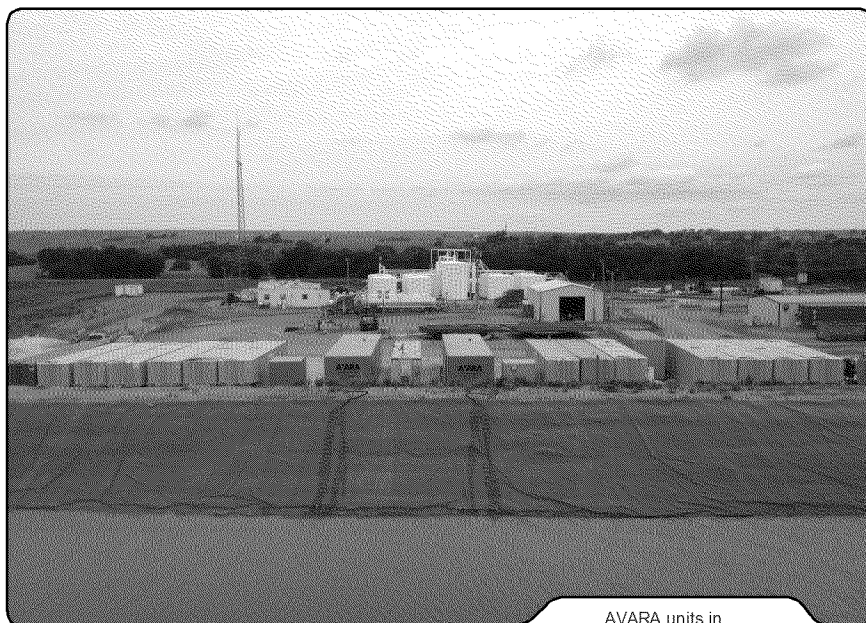


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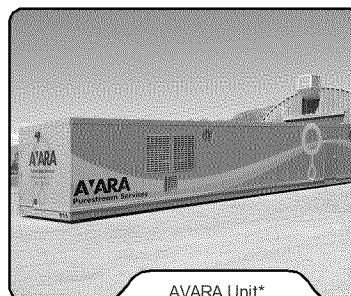
Industry :: Oil & Gas Production

Challenge :: Clean water for transfer and piping, minimize liability for spills.
Concentrate produced water for heavy brine re-use in drilling ops.

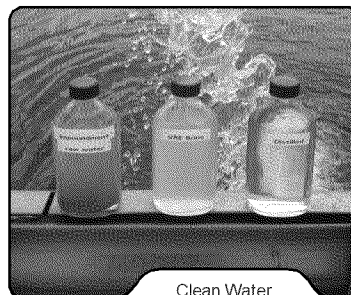
Solution :: AVARA Advanced Vapor Recompression



AVARA units in
Wheeler County, TX



AVARA Unit*



Clean Water
and Brine

+ Key Advantages of AVARA ::

- Recycles water with TDS of up to 150,000ppm for beneficial re-use
- Reduces source water costs
- Provides clean water product for re-use in fracturing or discharge* among other uses
- One AVARA system provides over 1000 barrels of clean, distilled water per day
- Scalable, multiple systems may be used as a centralized, in-field solution
- Unique low pressure, minimizes fouling issues
- AVARA is a robust system that is able to handle feed water variability
- In-field treatment reduces trucking costs
- Residual brine may be recycled and re-used in the drilling process
- Most energy efficient mechanical vapor recompression system for oil-field uses about 3.5kw per barrel

* Federal, state and local discharge
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